## LING 625: Seminar in phonology

Instructor: Adam McCollum
Class Meetings: Mondays and Tuesdays 10:20-11:40 am
Classroom: Room 108
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> You see, I went on with this research just the way it led me. That is the only way I ever heard of research going. I asked a question, devised some method of getting an answer, and got a fresh question. Was this possible, or that possible? You cannot imagine what this means to an investigator, what an intellectual passion grows upon him.
> -HG Wells, The Island of Doctor Moreau

Since its inception, the Generative program has been intimately tied to issues of computational complexity and the general expressivity of the human language faculty. In this seminar we will probe one sub-concern within the grammar - does phonology count? We will lay some basic mathematical foundations using recent research in computational phonology, specifically work using formal language theory. We will connect relevant mathematical properties of phonological grammars to issues in learnability. Throughout the course these issues will be interwoven with empirical claims made in the literature. It is my hope that we can use these empirical claims as jumping off points to discuss the issue at hand - how high does phonology count, and if so, what bearing does that have on the human language faculty?

As a seminar, this class is highly dependent on reading and discussion. If you do not do the readings, you will likely be unable to meaningfully participate in discussion, and in turn will miss out on further formation of ideas that emerges via discussion. Thus, I expect everyone to read the assigned papers and come to class prepared to actively discuss them.

Your grade in this class is based on the following: participation, leading discussion, and writing a final paper relating the topics from this class to your own research.

- Each student officially enrolled in the class will be expected to lead or co-lead discussion on a number of papers during the term.
- Each student officially enrolled in the class will be expected to write a final paper connecting the topic of the seminar to their own research. Ideally, this would involve a paper on the computational properties of some phonological pattern claimed to involve counting of some sort, but other options are possible, and should be discussed with me. Remember, the goal of these things is to give you a platform for your research and launching pad for some of those first publications.

| Week | Date | Topic | Readings to discuss | Facilitator | Landmarks |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 9/7 | Intro |  | Adam |  |
| 2 | 9/11 | Empirical and theoretical concerns | McCarthy \& Prince 1986 sections $1-2.1$ | Adam |  |
|  | 9/14 |  | McCarthy \& Prince sections 2.2 - end | Adam |  |
| 3 | 9/18 | Basics of formal language theory | Heinz 2018 sections 1 - 5 | Adam |  |
|  | 9/21 |  | Heinz 2018 <br> sections 6-9 | Adam |  |
| 4 | 9/25 | Counting | Paster 2019 |  |  |
|  | 9/28 |  |  |  |  |
| 5 | 10/2 | Locality: Stress | Heinz 2009 |  |  |
|  | 10/5 |  | Stanton 2016 |  |  |
| 6 | 10/9 |  |  |  |  |
|  | 10/12 |  | Lamont 2021 |  |  |
| 7 | 10/16 | Locality: Tone | Jardine 2017 |  |  |
|  | 10/19 |  | Jardine 2020 |  | Initial meeting |
| 8 | 10/23 |  | Hyman \& Nyamwaro 2023 |  |  |
|  | 10/26 | Counting violations | Kawahara \& Breiss 2021 |  |  |
| 9 | 10/30 |  | Shih 2017 |  |  |
|  | 11/2 |  |  |  |  |
| 10 | 11/6 | Counting triggers | Dresher \& Nevins 2017 |  |  |
|  | 11/9 | More counting | Andersson et al 2020 |  |  |
| 11 | 11/13 |  | Krämer 2001 |  |  |
|  | 11/16 | Iterativity | Chandlee 2022 |  | Second meeting |
| No class the week of Thanksgiving |  |  |  |  |  |
| 13 | 11/27 | TBD |  |  |  |
|  | 11/30 | TBD |  |  |  |
| 14 | 12/4 | TBD |  |  |  |
|  | 12/7 | Presentations |  |  |  |
| 15 | 12/11 | Presentations |  |  |  |
|  | 12/14 | Presentations |  |  |  |
| Paper due Friday, December 22 by 4:00 pm |  |  |  |  |  |

Partial reference list

Andersson, S., Dolatian, H. and Hao, Y., 2020, May. Computing vowel harmony: The generative capacity of search \& copy. In Proceedings of the Annual Meetings on Phonology (Vol. 7).

Chandlee, J. 2022. Formalizing (non)iterativity and the computation of rule application modes. Haverford College manuscript.

Chandlee, J. and Heinz, J., 2018. Strict locality and phonological maps. Linguistic Inquiry, 49(1), pp.2360.

Chandlee, J., Heinz, J. and Jardine, A., 2018. Input strictly local opaque maps. Phonology, 35(2), pp.171205.

Dresher, B.E, and Nevins, A. 2017. Conditions on iterative rounding harmony in Oroqen. Transactions of the Philological Society 115(3), pp. 365-394.

Gerdemann, D. and Hulden, M., 2012, July. Practical finite state optimality theory. In Proceedings of the 10th international workshop on finite state methods and natural language processing (pp. 10-19).

Heinz, J., 2009. On the role of locality in learning stress patterns. Phonology, 26(2), pp.303-351.
Heinz, J. and Lai, R., 2013, August. Vowel harmony and subsequentiality. In Proceedings of the 13 th Meeting on the Mathematics of Language (MoL 13) (pp. 52-63).

Jardine, A., 2017. The local nature of tone-association patterns. Phonology, 34(2), pp.363-384.
Kawahara, S. and Breiss, C., 2021. Exploring the nature of cumulativity in sound symbolism: Experimental studies of Pokémonastics with English speakers. Laboratory Phonology, 12(1).

Krämer, M., 2001. Yucatec Maya vowel alternations-Harmony as syntagmatic identity. Zeitschrift für Sprachwissenschaft, 20(2), pp.175-217.

Lamont, A., 2021. Optimizing over subsequences generates context-sensitive languages. Transactions of the Association for Computational Linguistics, 9, pp.528-537.

Lionnet, F.A., 2016. Subphonemic teamwork: A typology and theory of cumulative coarticulatory effects in phonology. PhD thesis, University of California Berkeley.

McCarthy, J.J. and Prince, A., 1986/1996. Prosodic morphology. ScholarWorks@UMassAmherst. Linguistics Department Faculty Publication Series.

Paster, M., 2019. Phonology counts. Radical: A Journal of Phonology, 1, pp.1-61.
Shih, S., 2017. Constraint conjunction in weighted probabilistic grammar. Phonology, 34(2), pp.243-268.
Stanton, J., 2016. Learnability shapes typology: the case of the midpoint pathology. Language, pp.753791.

